

Work Order ID 153674***153674***

Page 1

Wednesday, November 23, 2016 4:02:26 PM

Item ID: D5380-1TRN

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Support Turning Detail

Start Date: 11/24/2016 Start Qty: 1.00 ***1***

Cust Item ID:

Required Date: 11/24/2016 Req'd Qty: 1.00 ***1***

Customer:

Reference:

Approvals: Process Plan: *VS* *[Signature]* Date: *11/11/23*

Tooling:

Date:

Run Start ***NR1***

QC: _____ Date: _____

SPC (Y/N): _____

Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr

Revision Nbr

D5380

B

100

0.04

100

MORI SEIKI CNC LATHE LARGE

Doosan

Memo

0.10

Doosan Lathe

Turn blank as per Folio FB459

1 + 1 *SL 16-11-24*

110

0.00

110

QC2- Inspect parts off machine FAI/FAIB

QC

Memo

0.00

Quality Control

SL 16-11-24
PTO

120

0.00

120

QC8- Inspect parts - second check

QC

Memo

0.00

Quality Control

1 0 *DAS 20 9-89 16-11-24*

DQA: JA Date: Jan 4 2017



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: RM Date: DEC 13 2016

Work Order update only ☐

Work Order: <u>153674</u> Part No. <u>D 5380-1</u> NCR No. <u>16-6153</u>		DISPOSITION Rework ☐ Scrap ☒ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table border="0"> <tr> <td>Skid-tube ☐</td> <td>Cross tube ☐</td> <td>Water Jet ☐</td> <td>Engineering ☐</td> </tr> <tr> <td>Machining ☒</td> <td>Small Fab ☐</td> <td>Prod. Eng. Coord. ☐</td> <td>Quality ☐</td> </tr> <tr> <td>Thermoforming ☐</td> <td>Finishing ☐</td> <td>Rec/Store/Packaging ☐</td> <td>Other ☐</td> </tr> <tr> <td>Large Fab ☐</td> <td>Composite ☐</td> <td>Supplier ☐</td> <td></td> </tr> </table>						Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☒	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐																																															
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Description Work Order Deviation				Disposition				Completed By <u>SK</u> <u>16-11-24</u>																																																															
1 part is scrap. Skel did not measure properly on the probe causing ID to be oversized.				Scrap + replace <u>B 144958</u>				Lead hand / Supervisor Approval Verification <u>B</u> <u>16-11-24</u>																																																															
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Work Order ID 153674***153674***

Page 2

Wednesday, November 23, 2016 4:02:26 PM

Item ID: D5380-1TRN

Accept

N900040100

Setup Start

NS1

Revision ID:

Stop

NS2

Item Name: Support Turning Detail

Start Date: 11/24/2016 Start Qty: 1.00

1

Cust Item ID:

Required Date: 11/24/2016 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals:

Process Plan: _____

Date: _____

Tooling: _____

Date: _____

Run Start

NR1

QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Stop

NR2Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

130

0.00

130

Packaging

0.00

Packaging

Memo

LOCATION: MAT060

Packaging

1

0

DAS

20

9-89

16-11-24

140

0.00

140

QC21- Final Inspection - Work Order Release

0.02

QC

Memo

Quality Control

DAS
21
9-89

NOV 24 2016

16-11-24

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :				MRB (QSI042) Approval 	
Description Work Order Deviation				Disposition					
								Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	

Root Cause				FAULT CATEGORY			
Environment ☐		No Re-verification ☐		Pressure/Forced ☐		Temperature/Cure ☐	
Design ☐		Operator ☐		Bending ☐		Set-up ☐	
Doc/Data ☐		Offset/Setup ☐		Centre Not Concentric ☐		BOM/Route ☐	
Equip/Tooling ☐		Supplier ☐		Cracks ☐		Broken/Damage/Defect ☐	
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Substation ☐		Process Improvement ☐		Marks/Chatter ☐		Drill Holes ☐	
Past Expiry Date ☐		Manufacturing Process ☐		OTHER : ☐			
Misidentified ☐		Past Due ☐					

Picklist Print

Wednesday, November 23, 2016 4:02:33 PM

Page 1

Work Order ID: 153674

153674

Parent Item: D5380-1TRN

D5380-1TRN

Parent Item Name: Support Turning Detail

Start Date: 11/24/2016

Required Date: 11/24/2016

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP REV.A NEW ISSUE JFS 16/02/02 VERIFIED BY: DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D6104-011		Manufactured	No			100	Each	29.0000	1	1			

D6104-011

17-4 SS Roundbar 6.50"OD

16-11-24

Location

Loc Qty

Loc Code

MAT043

29

139232

1

144958

4

145266

10

148652

12

151924

2

1+1

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐							
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Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐						
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Past Expiry Date ☐	Manufacturing Process ☐	OTHER :									
Misidentified ☐	Past Due ☐										

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

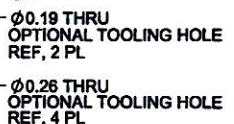
QA Closed: _____ Date: _____

Work Order update only ☐

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Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____							
Misidentified ☐	Past Due ☐								



Y $\frac{V_{12}}{62}$
T
14/11/23



2016 NOV 08
RCN 16-643

APPROVED

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WORK ORDER NON-CONFORMANCE / UPDATE

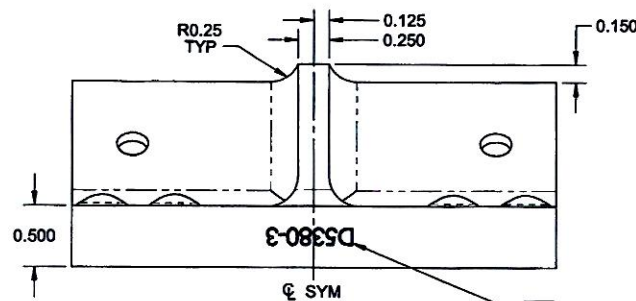
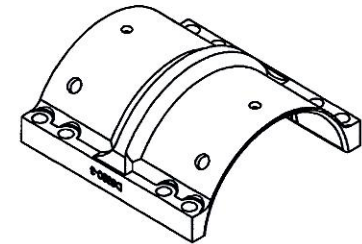
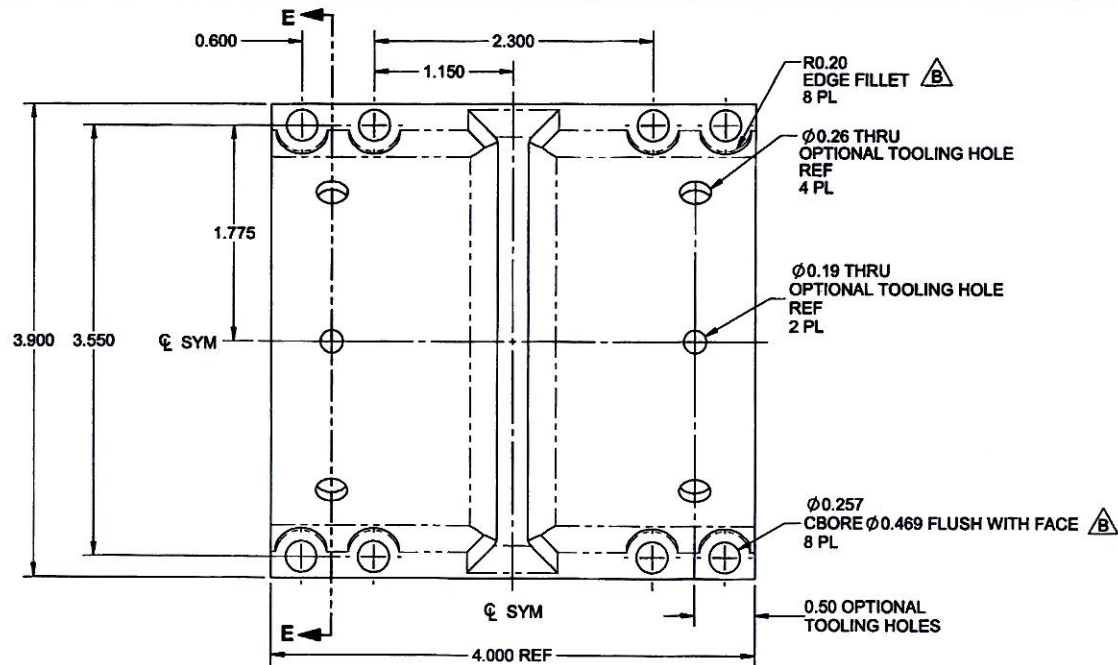
QA Closed: _____ Date: _____

Date: _____

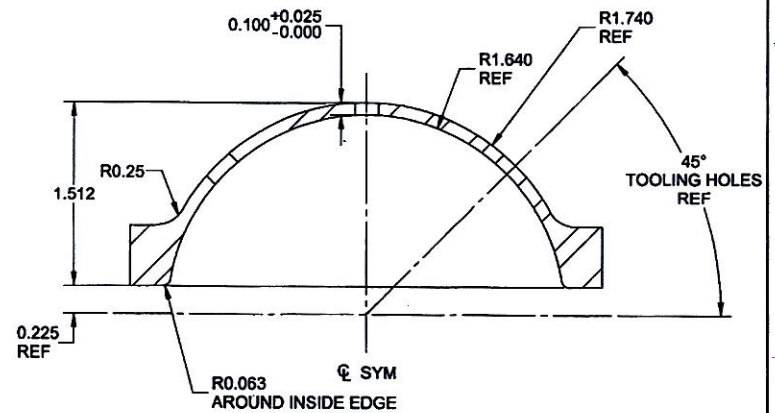
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Past Expiry Date ☐	☐	Manufacturing Process ☐		OTHER :							
Misidentified ☐	☐	Past Due ☐									



D5380-3 SUPPORT BASE



SECTION E-E

- NOTES:
- 1) MATERIAL: MAKE FROM D5380-3TRN
 - 2) FINISH: NONE
 - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
 - 6) IDENTIFICATION: DART P/N WITH 0.125 HIGH LETTERING AND 0.005-0.010 DEEP PER DART QSI 044 6.3
 - 7) WEIGHT: 0.89 lbs
 - 8) PROFILE ALL NON DIMENSIONED FEATURES PER CAD FILE "D5380-3-REVB.STP"

RELEASED

2016 NOV 08

APPROVED

DESIGN	ML	DART AEROSPACE LTD	
DRAWN	ML	HAWKESBURY, ONTARIO, CANADA	
CHECKED	AJS	DRAWING NO.	REV. B
MFG. APPR.	JFS	D5380	SHEET 3 OF 4
APPROVED	WM	TITLE	SCALE
DE APPR.	DS	SUPPORT	NTS
DATE	16.07.07	COPYRIGHT © 2016 BY DART AEROSPACE LTD	

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DQA: _____ Date: _____



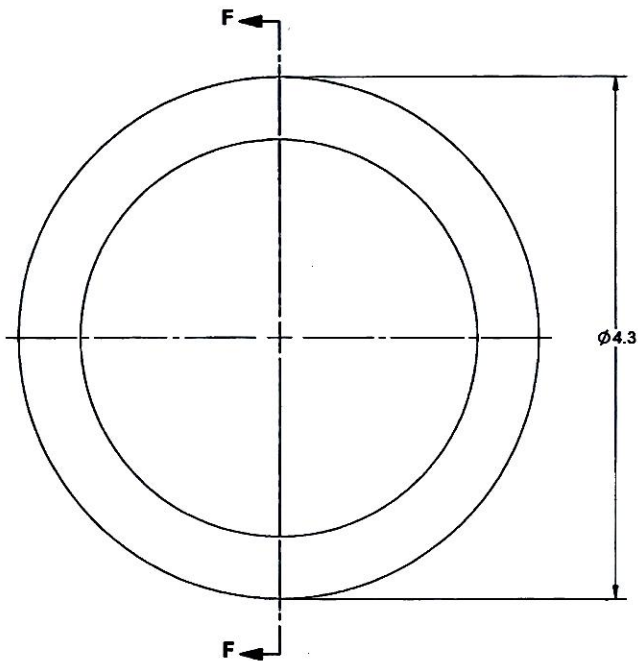
WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

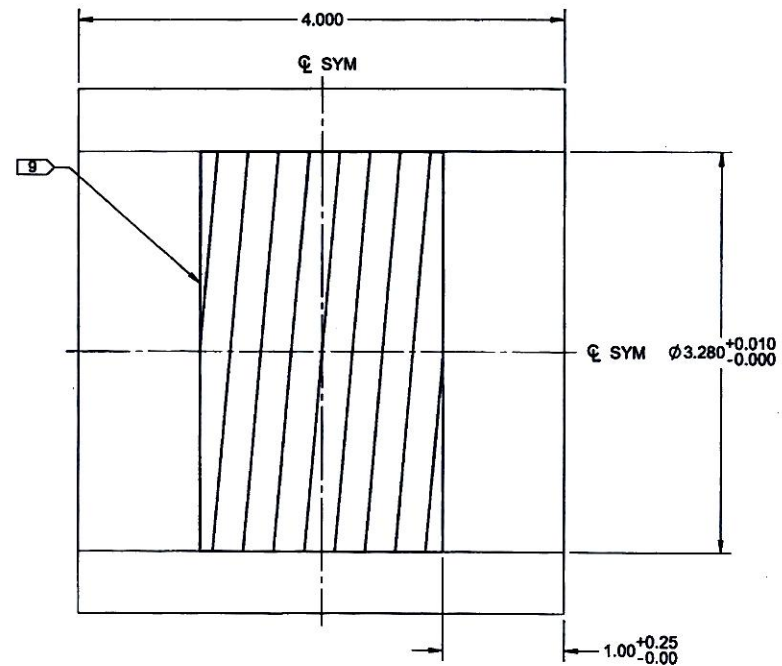
Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By _____ Lead hand / Supervisor Approval Verification _____ QC / QA Coordinator Approval _____		
Description Work Order Deviation				Disposition					

Root Cause				FAULT CATEGORY			
Environment	☐	No Re-verification	☐	Pressure/Forced	☐	Temperature/Cure	☐
Design	☐	Operator	☐	Bending	☐	Set-up	☐
Doc/Data	☐	Offset/Setup	☐	Centre Not Concentric	☐	BOM/Route	☐
Equip/Tooling	☐	Supplier	☐	Cracks	☐	Broken/Damage/Defect	☐
Handling/Pre	☐	Training	☐	Crimp/Kink/Ripple/Wave	☐	Inspection Incomplete/Unqualified	☐
Material	☐	Use for Testing	☐	Cuffs	☐	Contamination	☐
Internal Transport	☐	Poor Information	☐	Crushing	☐	Countersink	☐
Tribal Knowledge	☐	Rushing	☐	Heat Treat	☐	Cut Too Short	☐
LOA	☐	Product Improvement	☐	Wave/Twist in Tube	☐	Instructions Incomplete/Unclear	☐
Substation	☐	Process Improvement	☐	Marks/Chatter	☐	Drill Holes	☐
Past Expiry Date	☐	Manufacturing Process	☐	OTHER : _____			
Misidentified	☐	Past Due	☐				



D5380-3TRN



SECTION F-F

NOTES:

1) MATERIAL: 17-4 PH/S17400/TYPE 630 ROUND BAR PER AMS 5643 / ASTM A564 H900 OR H925 CONDITION, MIN UTS = 170 KSI (38 HRc) REF DART SPEC. M17-4-R

2) FINISH: NONE

3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED

4) UNITS: INCHES UNLESS OTHERWISE NOTED

5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX

6) IDENTIFICATION: IDENTIFY PER DART QSI 044

7) WEIGHT: 7.02 lbs

8) PROFILE ALL NON DIMENSIONED FEATURES PER CAD FILE "D5380-3TRN-REVB.STP"

9) SURFACE IS TO BE THREADED USING R0.032 TOOLING AT A DEPTH OF 0.032 $\begin{smallmatrix} +0.000 \\ -0.010 \end{smallmatrix}$ WITH A PITCH OF 0.125 $\begin{smallmatrix} +0.010 \\ -0.010 \end{smallmatrix}$

RELEASED

2016 NOV 08

APPROVED

DESIGN	ML	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	ML		
CHECKED	AJS	DRAWING NO.	REV. B
MFG. APPR.	JFS	D5380	SHEET 4 OF 4
APPROVED	WM	TITLE	SCALE
DE APPR.	DS	SUPPORT	NTS
DATE	16.07.07	COPYRIGHT © 2016 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

DQA: _____ Date: _____

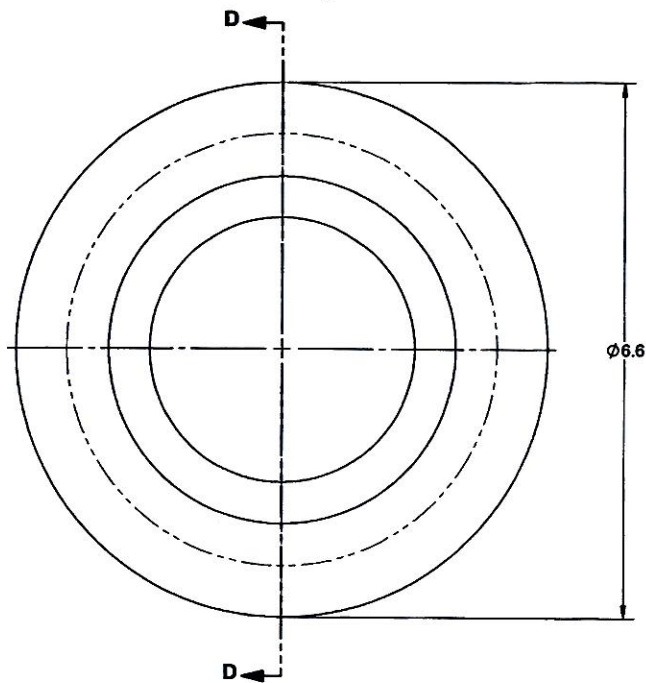


WORK ORDER NON-CONFORMANCE / UPDATE

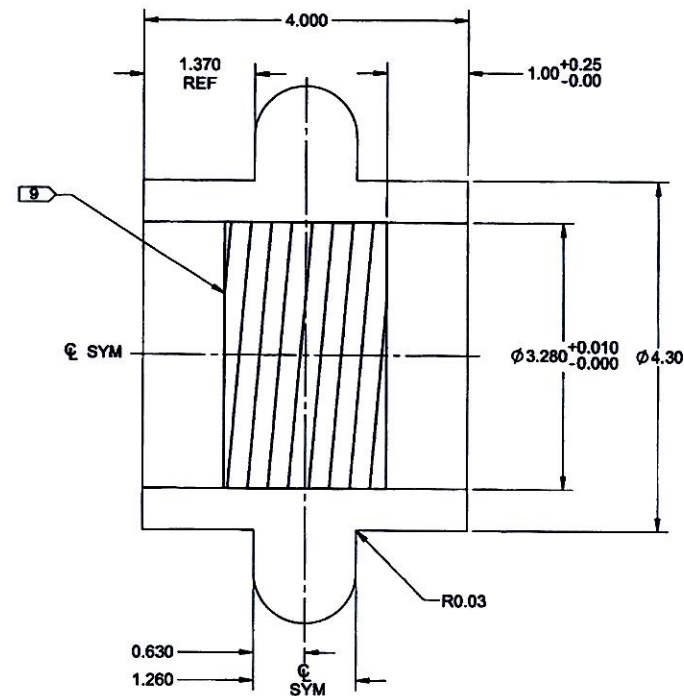
QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐							
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By _____ Lead hand / Supervisor Approval Verification _____ QC / QA Coordinator Approval _____				
Description Work Order Deviation				Disposition							
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐		No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐		Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐		Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabelled ☐ Fit/Function ☐ Misaligned/off center ☐		Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐	
OTHER : _____											



D5380-1TRN



SECTION D-D

RELEASED

2016 NOV 08

NOTES:

1) MATERIAL: 17-4 PH/S17400/TYPE 630 ROUND BAR PER AMS 5643 / ASTM A564 H900 OR H925 CONDITION, MIN UTS = 170 KSI (38 HRC) REF DART SPEC. M17-4-R

2) FINISH: NONE

3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED

4) UNITS: INCHES UNLESS OTHERWISE NOTED

5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX

6) IDENTIFICATION: IDENTIFY PER DART QSI 044

7) WEIGHT: 13.21 lbs

8) PROFILE ALL NON DIMENSIONED FEATURES PER CAD FILE "D5380-1TRN-REV.B.STP"

9) SURFACE IS TO BE THREADED USING R0.032 TOOLING AT A DEPTH OF 0.032^{+0.010/-0.010} WITH A PITCH OF 0.125^{+0.010/-0.010}

APPROVED

DESIGN	ML	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	ML		
CHECKED	AJS	DRAWING NO.	REV. B
MFG. APPR.	JFS	D5380	SHEET 2 OF 4
APPROVED	WM	TITLE	SCALE
DE APPR.	DS	SUPPORT	NTS
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DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : ☐					